

Certificate of Type Approval

This is to certify that the product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	Markus Lifenet Ltd
Address	Hvaleyrarbraut 27, 220 Hafnarfjordur, Iceland
Type	Means of Recovery of Persons
Description	Manually deployed man overboard retrieval device - Type: "Markusnet MS 0.5, MS.10, MS.20, MS.30"
Trade Name	Markusnet MS 0.5, MS.10, MS.20, MS.30
Specified Standard	BS ISO 19898:2019

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR21459800SS

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

This Certificate is an Amendment and a Renewal of Certificate Number SAS S160032

APPROVAL DOCUMENTATION

<u>Drawing No.</u>	<u>Date</u>	<u>Title</u>
TD No. 1	-	Markusnet Type MS Components
TD No. 2	1999-09-10	Rescue-net Structure
TD No. 3	1999-09-10	Net Structure and Attached Parts
TD No. 4	-	Container Components
MS Lable 1	-	Container Lable
MS Lable 2	-	Freeboard Lable
MS Lable 3	-	Instruction Lable on Container Lid
MS Lable 4	-	Technical Information on Lid
LEI-039 / 3	-	Manoverboard Safety & Rescue Guide
LEI-040/2	-	Technical Sheet

TEST REPORTS

IceTec Tensile & Buoyancy test report No. 8HP0047 dated 3 March 2000.

Netherlands Navy Testing, report dated 1 May 1991.

Tensile, Buoyancy and Temperature Cycling Test carried out at Innovation Centre Iceland, Report No 8HP15056, dated 10.08.2015.

Operational tests; Recovery test (self boarding), Recovery test (assisted boarding), 30° Inline test, 900 Rotation Test, Launching Time Test, test report dated 13/02/2022 & 05/04/2022.

Tensile load test, test report No: 422064, 30th March 2022.

Temperature cycling test, Floatation test, Tensile loading test , Test report No: 422004, Test report dated May-13 2022.

CONDITIONS OF CERTIFICATION

Maximum number of persons : 1
SWL : 92 Kg

<u>Type:</u>	<u>Lifting height up to:</u>
MS.05	5 m
MS.10	10 m
MS.20	20 m
MS.30	30 m

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1. For the use of recovery of one person at a time in horizontal or deck chair position from water to onboard deck of a vessel by manual lifting or by means of mechanical hoisting.
2. Recovery equipment should be clearly marked as single person use only along with the maximum lifting height it is designed for.
3. For each installation of the recovery device, the vessel owner/Operator shall conduct and document a Risk Assessment that take into account the anticipated condition and ship specific characteristics. The recovery plans and procedures should facilitate the transfer of persons from the water to the ship while minimizing the risk of injury from impact with the ship's side or other structures, including the recovery appliances itself.
4. Ship specific plan and procedure for recovery of persons from the water should be developed in accordance with MSC.1/Circ 1447 and MSC.1/Circ 1182. The recovery operation to be conducted without causing undue hazard to the ship and the ship's crew, taking into account, but not limited to:
 - .1 manoeuvrability of the ship;
 - .2 freeboard of the ship;
 - .3 points on the ship to which casualties may be recovered;
 - .4 characteristics and limitations of equipment intended to be used for recovery operations;
 - .5 available crew and personal protective equipment (PPE);
 - .6 wind force, direction and spray;
 - .7 significant wave height (Hs);
 - .8 period of waves;
 - .9 swell; and
 - .10 safety of navigation.
5. Recovery operations should be conducted at a position clear of the ship's propellers and, as far as practicable, within the ship's parallel mid-body section.
6. A source of illumination and, where required, a source of power should be available for the area where the recovery operation is conducted.
7. On board drills should be conducted to ensure that the crew is familiar with this equipment and ship's recovery procedures.
8. The hoisting mechanism to be used in conjunction with this recovery device is not part of this Design Appraisal or Certificate, but is expected to be tested in accordance with requirements of IMO Resolution MSC.81 (70) and chapter 12 of the LR Code for lifting appliance as appropriate, to the attending Surveyor's satisfaction.
9. **Installation onboard:** The installation of the recovery device is not part of this design appraisal or certificate. All such arrangements are to be to the satisfaction of the vessel's Administration and/or RO acting on their behalf on an installation-by-installation basis and ship specific basis.

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10. A staged demonstration of compatibility of the recovery device and hoisting arrangement by way of function test with 1.1 times the working load should be carried out to the satisfaction of the attending Surveyor. The date of installation test should be clearly and durably marked on the unit.
11. Before the delivery, each unit/or batch is to be subject to a static proof load test of not less than 2.2 times the safe working load. The particulars of the tests are to be clearly and durably marked on the unit. This does not preclude any further testing to additional requirements of the Marine Administration of the country where the ship is registered (i.e. the flag state) or those acting on behalf of that Administration.
12. Instructions for installation, use and maintenance are to be supplied with each device according to its end use.
13. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure compliance with SOLAS Regulation III/5.
14. If the specified standards are amended during the validity of this certificate, this product type is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

PLACE OF PRODUCTION

Markus Lifenet Ltd
Hvaleyrrabraut 27
220 Hafnarfjordur
Iceland



Lijo Thomas
Senior Specialist
Fire & Safety, Statutory Discipline Team
UK&I Technical Support Office, Marine & Offshore
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).